1. (1 point each) “Describe” the following terms (1 point each): Practice Note: I will select at most three of the terms below.

- algorithm
- task decomposition
- literal
- type
- syntax error
- sequence type
- list
- method
- dictionary
- code block

2. (2 points) What is one reason it is helpful to know that “everything is an object” in Python?

3. (2 points) Give one or two sentences describing why floating point numbers are usually not a good choice for items that are “counted” (e.g. money).
4. (2 points each) Give the output for each of the code snippets below.

(a) 
```python
a_number = 123403 % 1000
print( a_number // 25 )
```

(b) 
```python
a_string = 'abcdefg'
if a_string[1] == 'a':
    print( 'match' )
else:
    print( 'no go' )
```

(c) 
```python
a_list = [1, 2, 3]
a_list.append( 'andy' )
print( a_list.pop( ) )
```

(d) 
```python
a_dict = {1 : 2}
a_dict[1] = a_dict[1] ** 2
print( a_dict )
```

5. (2 points each) Give the value of x after each of the following code snippets execute.

(a) 
```python
x = 10
x = x / 2
x = x // 2
```

(b) 
```python
x = 'abcABC'
x = x.casefold()
x = x + x
```

(c) 
```python
x = []
x.append( [1, 2] )
x.append( [3, 4] )
```
6. (2 points each) Identify one error in each of the code snippets given below. Practice Note: This may be a syntax, runtime, or logical error. You do not need to classify the error, you only need to mark it. Note there may be more than one error in a particular snippet.

(a) 
```python
last_name = input( 'Enter your last name' )
last_name.casefold()
print( 'Your name in all lowercase is', last_name )
```

(b) 
```python
if first_name[0] == 'A' or 'B':
    print( 'Your name starts with an A or a B' )
else
    print( 'Your name does not start with A or B' )
```

7. (3 points each) Consider the possible operations given below. For each:
   - Give the Python data structure(s) (string, list, tuple, dictionary) you would use to store the information.
   - Give an example of how you would store and use the information in the structure.
   - Defend your choice with one or two sentences.

   (a) Printing the street address of a customer on a mailing label

   (b) Printing a label for every customer of a company

   (c) Looking up basic information (name, age, address) for a single customer to prepare for a sales meeting

   (d) Check customer information (name, age, address) for all customers of several different businesses to analyze product demographics
8. (3 - 7 points each) Complete the Python code given below so that it correctly implements the specification given in the comments

(a)
```
# This program prints 'success' exactly when the entered username and password
# match the information we have on authorized users.
authorized_users = {'andy': 'password123', 'jdoe': '298t0njd1'}
username = input('Enter your username: ')
password = input('Enter your password: ')
```

(b)
```
# This program takes the minutes past midnight and converts it to a standard
# time format (12 hour format, AM/PM)
minutes = int(input('Enter minutes past midnight: '))
hour = minutes // 60
```

9. Create a Python program to solve each of the problem specifications given below. (5 - 15 points each)

(a) Write a Python program to compute the number of times a user-specified letter appears in text provided by the user.

(b) Write a Python program to count the total number of words in a user-specified text.

(c) Implement a simple “rock-paper-scissors” game. This game should:
   1. Prompt player 1 for their choice (rock, paper, or scissors).
   2. Prompt player 2 for their choice (rock, paper, or scissors).
   3. Display the outcome of the game. For those not familiar with the game, the outcomes are determined by the following rules:
      - Rock beats Scissors
      - Scissors beats Paper
      - Paper beats Rock
      - The game is a draw if both players make the same choice.

(d) Write a program to “translate” a given word to a simplified version of “Pig Latin”. The conversion rules are:
   - If the given word begins with a vowel (a, e, i, or u), ‘yay’ is added to the end of the word.
   - If the given word begins with a consonant, the first letter is moved to the end of the word and ‘ay’ is added to the end.